

FIG. 1

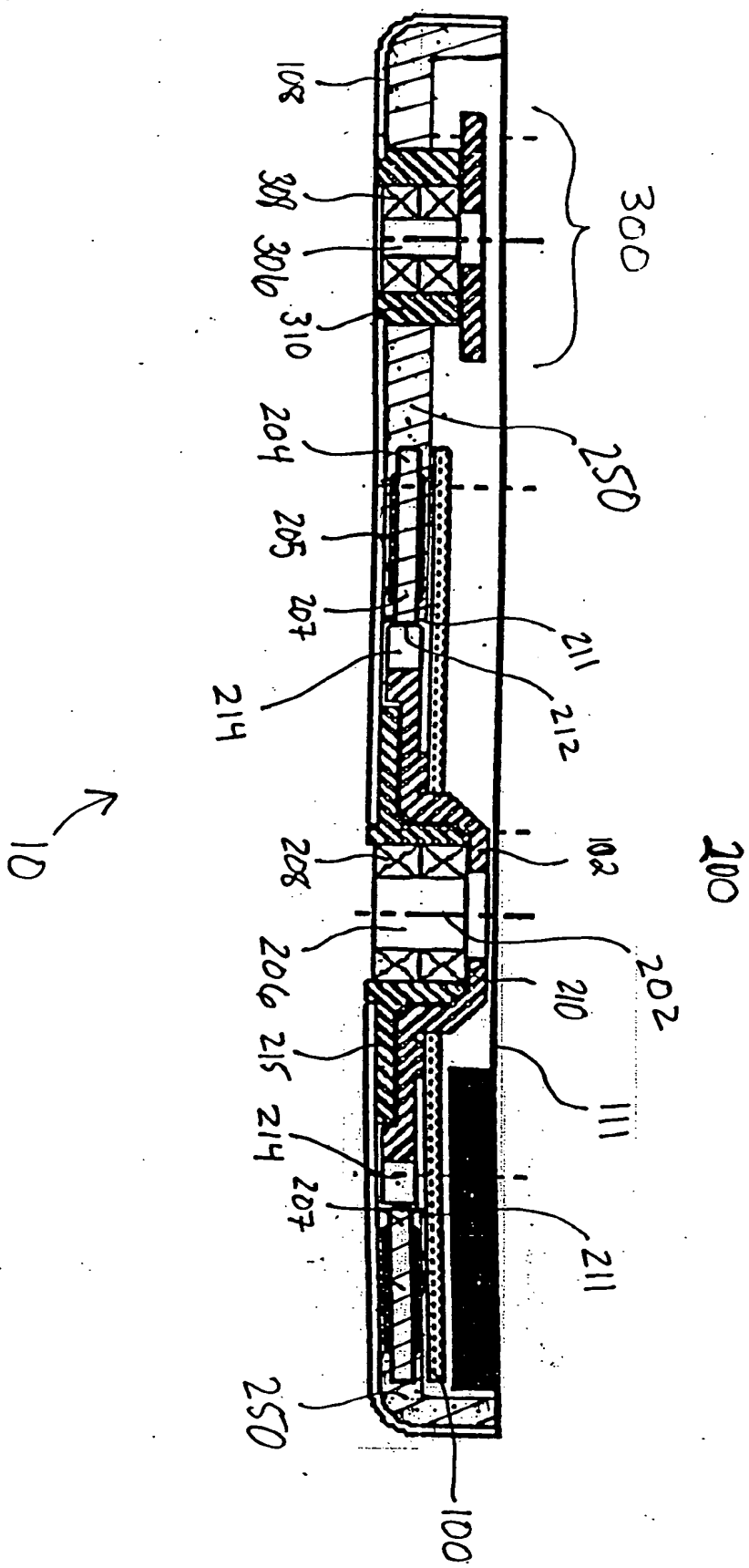
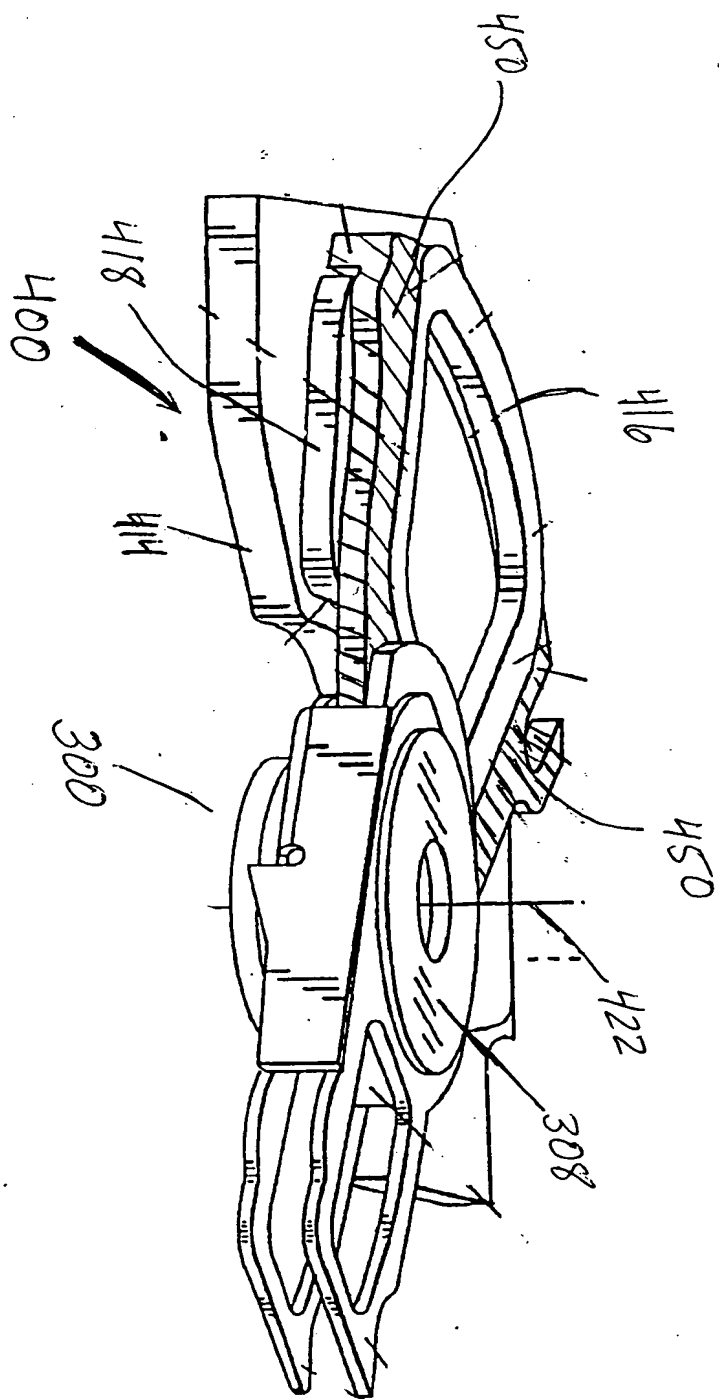
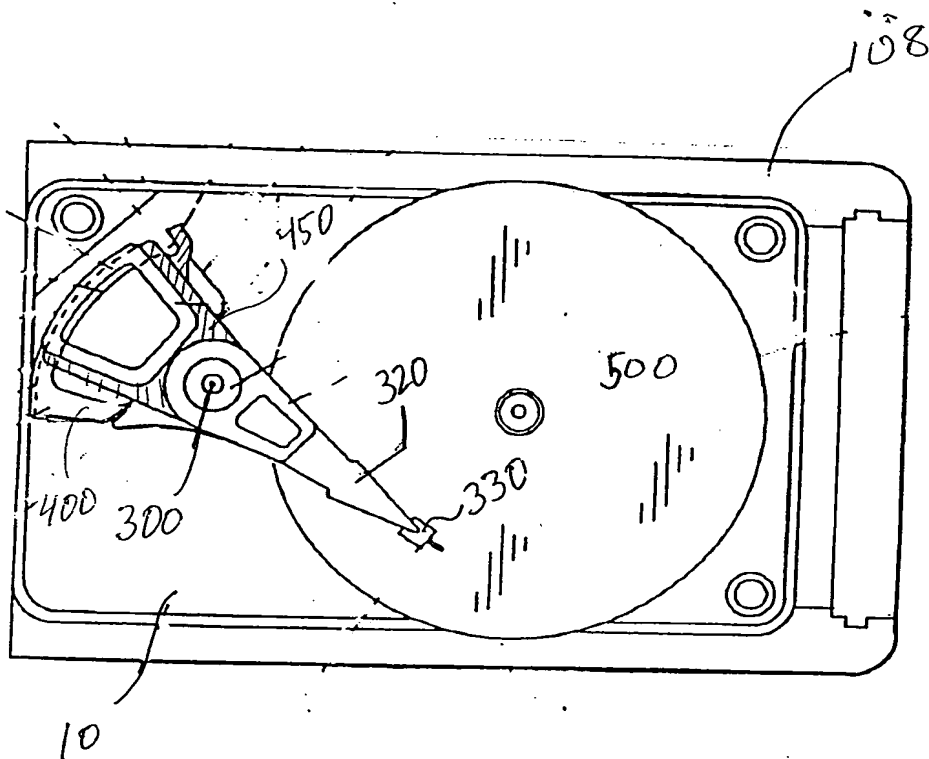


FIG. 2



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FIG. 3



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FIG. 4a

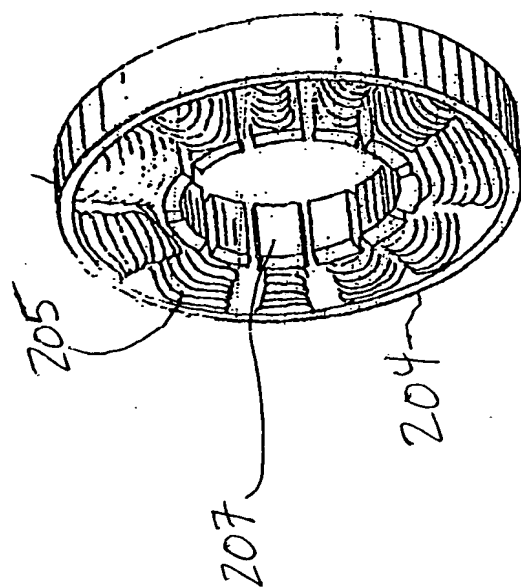


FIG. 4b

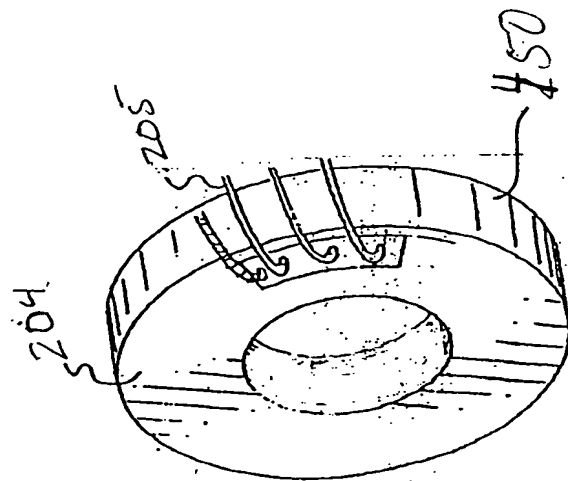
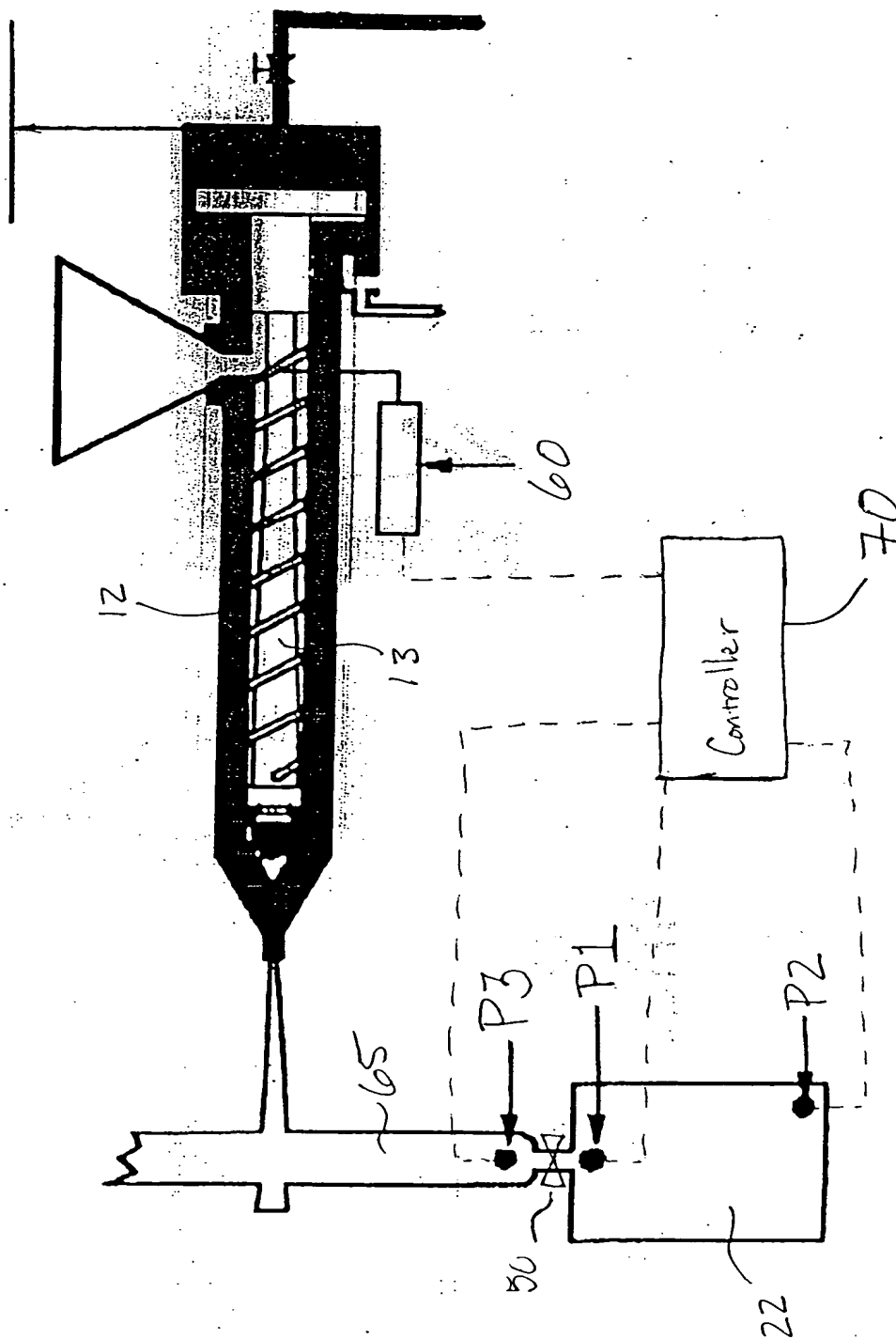


FIG. 5



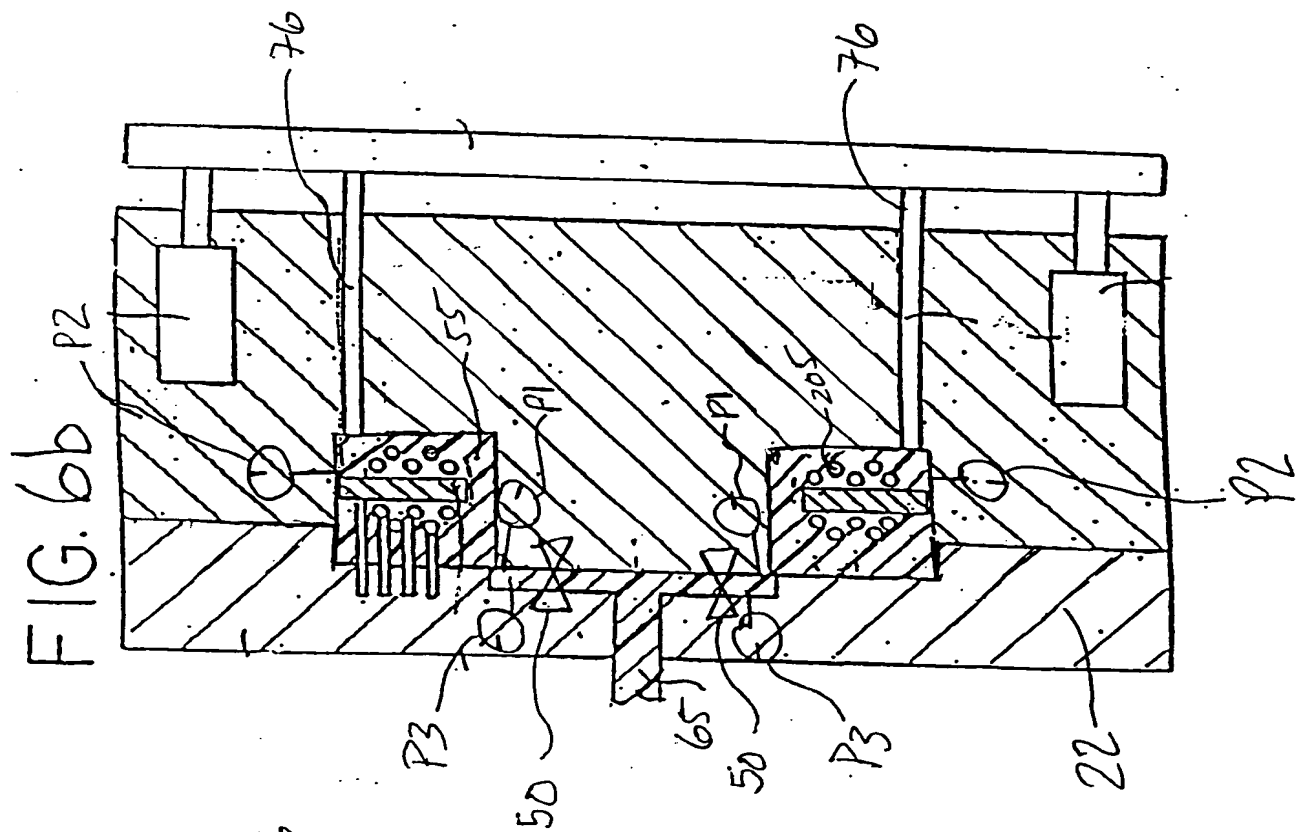
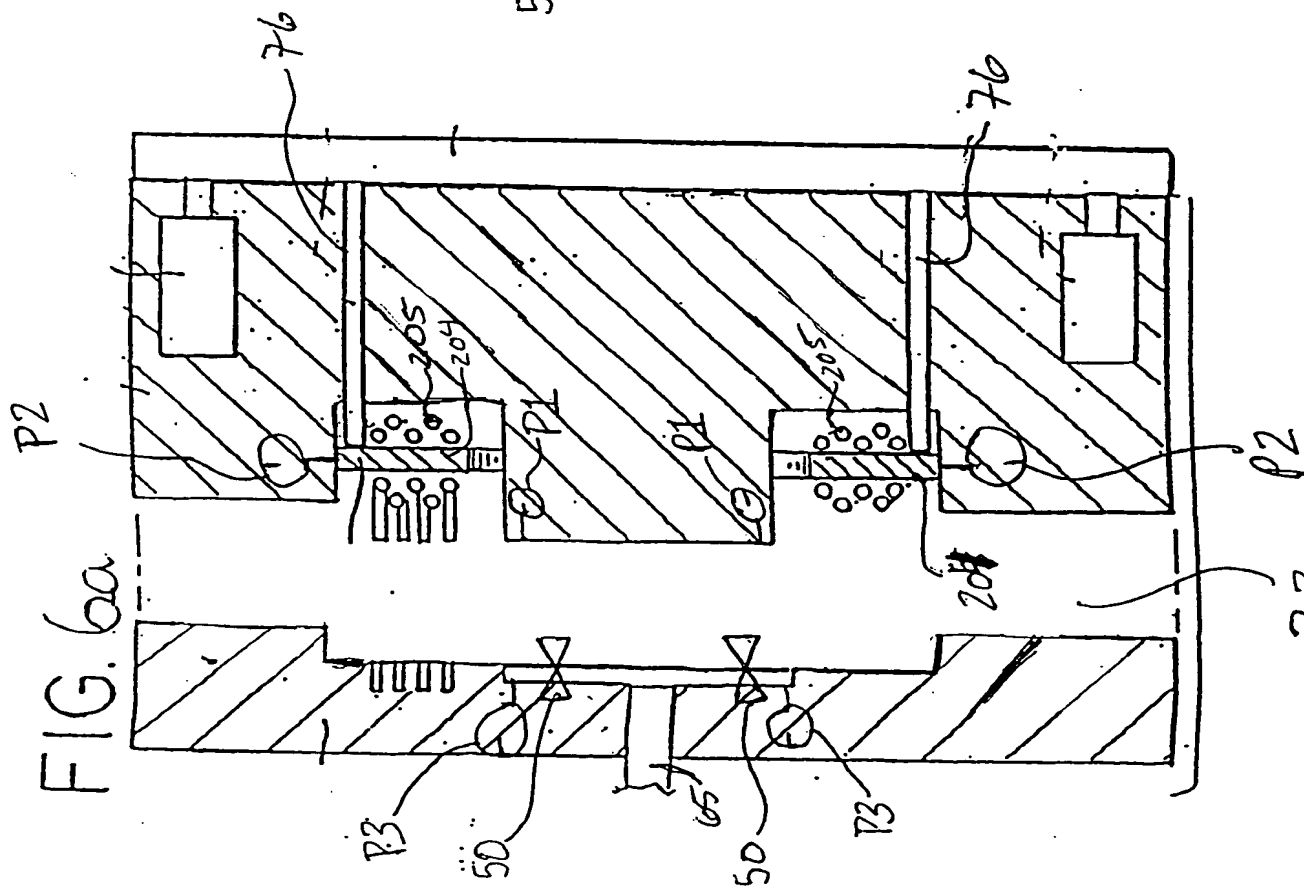
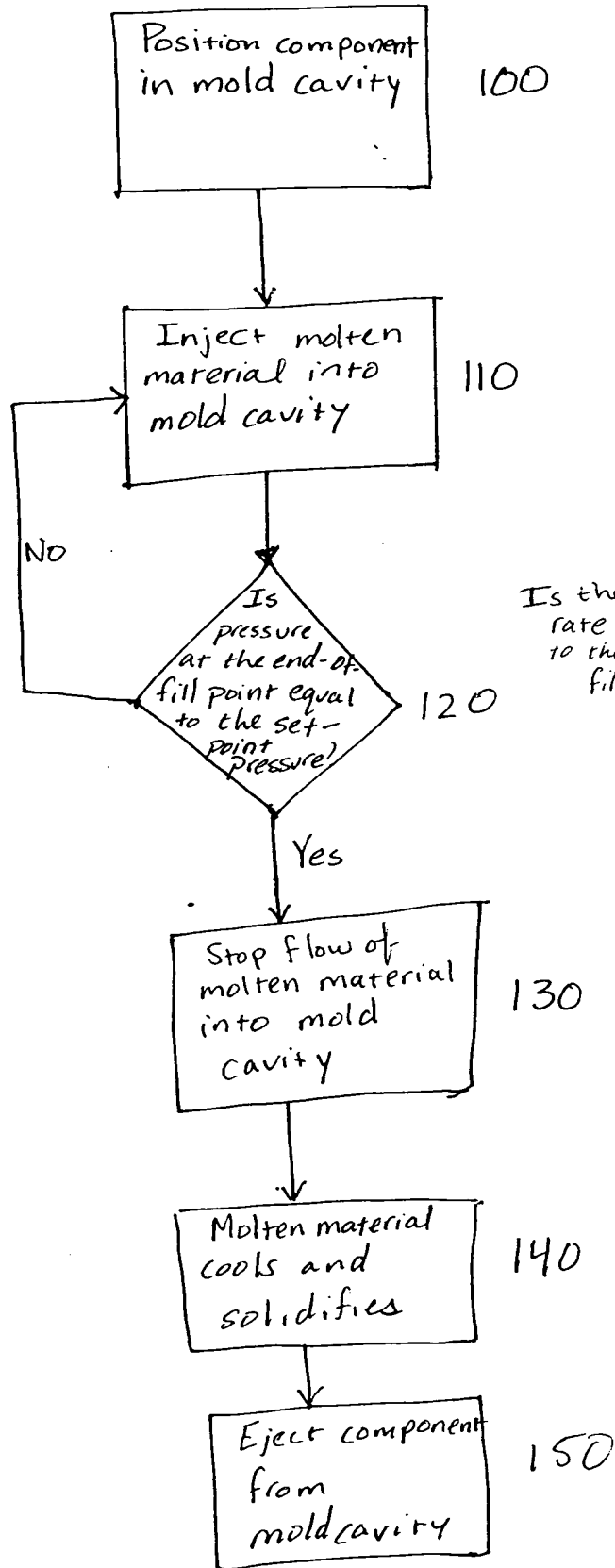


FIG. 7



Is the fill rate equal to the setpoint fillrate

Is the pressure at the beginning of fill point equal to the set point beginning of fill pressure

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FIG. 8

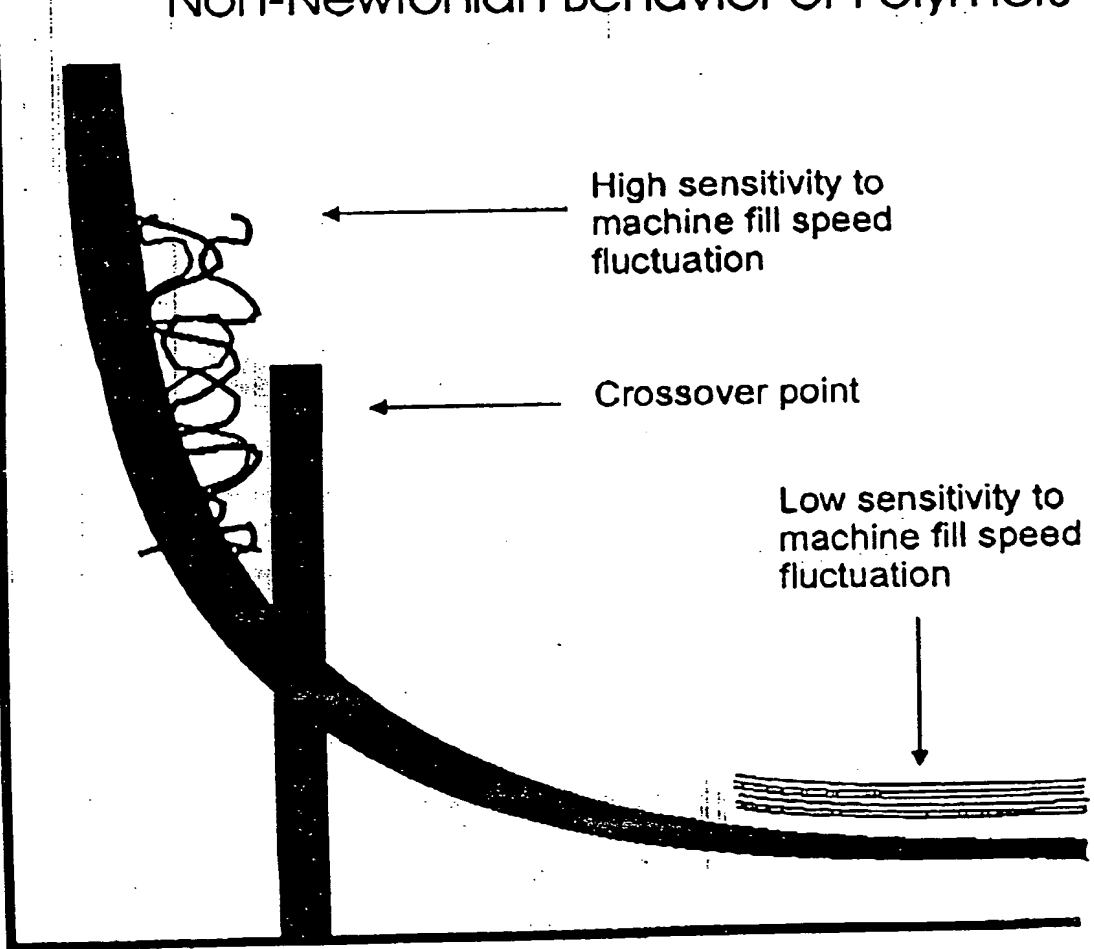
# Non-Newtonian Behavior of Polymers

THICK



VISCOSITY

THIN



High sensitivity to machine fill speed fluctuation

Crossover point

Low sensitivity to machine fill speed fluctuation

SLOW

FLOW RATE



FAST



# More Consistent Plastic Pressure in the Mold

FIG. 9a

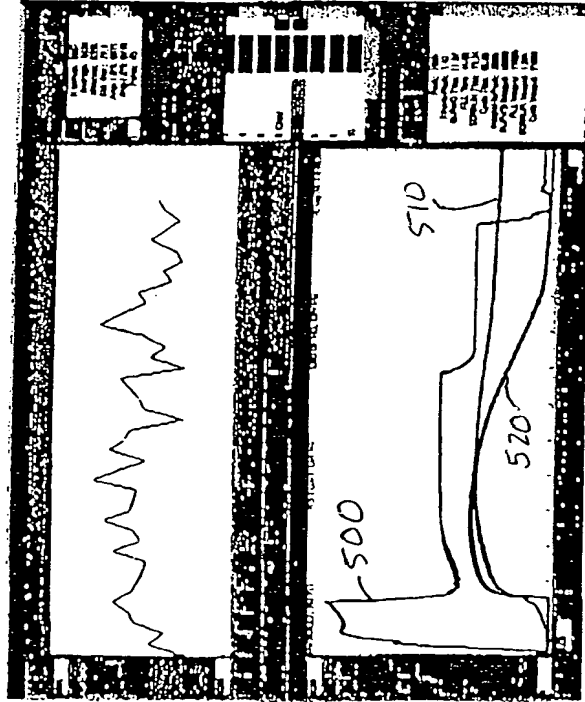


FIG. 9b

FIG. 9c

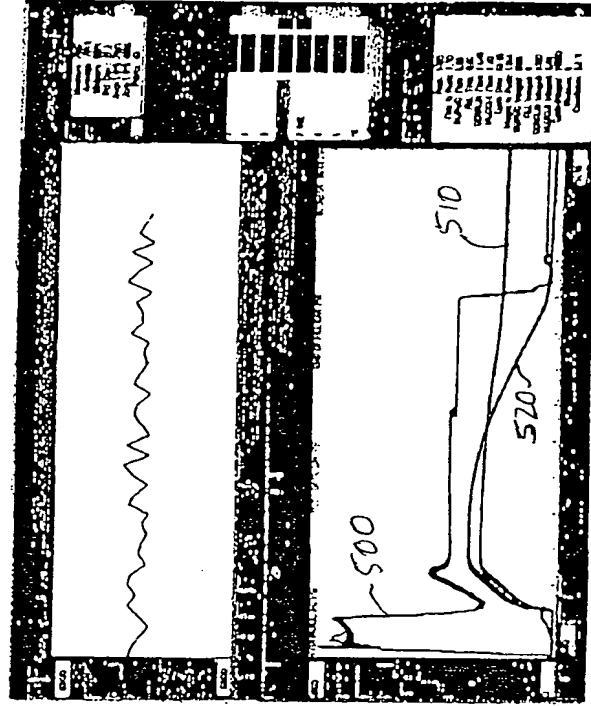


FIG. 9d

Without Control

FIG. 9

FIG. 10

Table I

<u>SAMPLE VOICE COIL MOTORS</u>		
	<u>Sample</u>	<u>Resonance (Hertz)</u>
End-of-Fill Cavity Pressure 4400-4499 psi	1	9,240
	2	9,272
	3	9,248
	4	9,256
	5	9,288
	6	9,296
	7	9,296
Average		9,271
Max		9,296
Min		9,240
Sigma		<b>23</b>
End-of-Fill Cavity Pressure 4500-4700 psi	1	9,288
	2	9,304
	3	9,280
	4	9,256
	5	9,280
	6	9,320
	7	9,256
	8	9,304
	9	9,288
	10	9,288
	11	9,248
	12	9,280
	13	9,288
	14	9,280
Average		9,283
Max		9,320
Min		9,248
Sigma		<b>20</b>
End-of-Fill Cavity Pressure 4701-4800 psi	1	9,296
	2	9,248
	3	9,312
	4	9,296
Average		9,288
Max		9,312
Min		9,248
Sigma		<b>28</b>

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